

**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE DEPARTMENT OF NATURAL RESOURCES OF CANADA
ON COLLABORATION IN
ENERGY RESEARCH AND DEVELOPMENT**

WHEREAS

The Department of Energy of the United States of America (DOE) and the Department of Natural Resources of Canada (NRCan), formerly the Department of Energy, Mines and Resources of Canada, (hereinafter referred to as the "Participants") signed a Memorandum of Understanding on Energy Research and Development on December 4, 1986, which expired on December 4, 1996;

The Participants wish to continue increasing the effectiveness of their programs of energy research and development (hereinafter referred to as "Energy R&D") and further expand collaboration between their two countries in this area;

The Participants subscribe to the concept of joint planning of Energy R&D programs as a vital element of enhanced Energy R&D collaboration and subscribe to the early sharing of Energy R&D program plans to facilitate the equitable allocation of research tasks within joint programs or projects; and

The Participants continue to believe that initiatives such as sharing tasks, facilities, scientific and technical information, costs and human resources could result in accomplishment of their objectives more efficiently, including achieving greater results at existing levels of expenditure. The Participants further recognize that expanded early joint planning could ultimately lead to collaboration in the construction and use of major facilities for Energy R&D. In this way, the activities of one Participant would be interdependent upon the activities of the other Participant;

THEREFORE, the Participants have reached the following understanding:

ARTICLE 1

Objective

The objective of this Memorandum of Understanding (hereinafter referred to as the "MOU") is to establish a framework for collaboration between the Participants in Energy R&D activities. Such collaboration will be on the basis of mutual benefit, equality and reciprocity.

ARTICLE 2

Scope

Collaboration under this MOU may include, but is not limited to, the following fields:

- a) energy conservation and energy efficiency;
- b) renewable energy technologies;
- c) alternative transportation fuels;
- d) fossil energy; and
- e) environmental protection and health research relating to energy technologies.

Other collaborative fields may be added by written agreement of the Participants.

ARTICLE 3

Forms of Collaborative Activities

Collaboration in accordance with this MOU may include, but is not limited to, the following forms:

1. Exchange of information on program plans.
2. Early consultations by senior policy and program officials to permit joint program planning of Energy R&D activities.
3. Exchange of scientists, engineers, and other specialists for participation in agreed research, development, analysis, design and experimental activities conducted in research centers, laboratories, engineering offices and other facilities and enterprises of each of the Participants or its contractors for agreed periods.
4. Exchange, on a current basis, of scientific and technical information, and results and methods of research and development.
5. Organization of seminars and other meetings on specific agreed topics. Such seminars will normally be held alternately in Canada and the United States for each topic.
6. Joint projects in which the Participants agree to share the work and/or costs.
7. Other specific forms of collaboration may be added by mutual written agreement by the Participants.

ARTICLE 4

Implementing Arrangements

When the Participants agree to undertake a form of cooperation set forth in Article 3, the Participants will execute a written Implementing Arrangement. Each such Implementing Arrangement will include all detailed provisions for carrying out the specified forms of cooperation and will cover such matters as technical scope, intellectual property, management, total costs, cost sharing and schedule.

ARTICLE 5

Management

1. To supervise the execution of this MOU, each Participant will designate one person to serve as Lead Coordinator. Each Lead Coordinator will appoint a Technical Coordinator for each of the technical fields or groups of related technical fields as may be necessary.
2. The Lead Coordinators will normally meet each year, alternately in Canada and the United States. At their meetings, the Lead Coordinators will evaluate the status of cooperation under this MOU. This evaluation will include a review of the past year's activities and accomplishments and of the activities planned for the coming year within each of the technical fields or groups of related technical fields listed in Article 2, an assessment of the balances of exchanges within each of the technical fields or groups of technical fields listed in Article 2, and consideration of measures required to correct any imbalances. In addition, the Lead Coordinators will consider and act on any major new proposals for collaboration. Technical Coordinators may, at the discretion of the Lead Coordinators, participate in these annual meetings.

ARTICLE 6

Intellectual Property

The Participants negotiating each Implementing Arrangement can elect to specify the allocation of intellectual property, interests and royalties for intellectual property or they can agree that their Implementing Arrangement will be governed by the Agreement on the Allocation of Intellectual Property Rights, Interests and Royalties for Intellectual Property Created or Furnished under Certain Scientific and Technological Cooperative Research Activities effected by exchange of notes at Ottawa February 4, 1997.

ARTICLE 7

General Provisions

1. Collaboration under this MOU will be in accordance with the laws and the regulations of the respective Participants. All questions related to this MOU arising during its term will be settled by the Participants by mutual agreement.
2. Nothing in this MOU is intended to affect arrangements for cooperation or collaboration between the Participants or any other arrangements of the Participants in existence on the date this MOU comes into force.

ARTICLE 8

Funding

Except as may be otherwise agreed in writing, all costs resulting from cooperation under this MOU will be borne by the Participant that incurs the costs. It is understood that the ability of each Participant to carry out its obligations under this MOU is subject to the availability of appropriated funds.

ARTICLE 9

Effective Date and Termination

1. This MOU will become effective upon signature by both Participants and remain in effect for ten (10) years. This MOU may be amended or extended by mutual written agreement. This MOU may be terminated at any time by either Participant upon six (6) months written notice to the other Participant.
2. This MOU does not create legally binding obligations between the Participants.

Done in duplicate at Washington, D.C., this 18th day of March 1998.

FOR THE DEPARTMENT OF ENERGY OF
THE UNITED STATES OF AMERICA:



FOR THE DEPARTMENT OF
NATURAL RESOURCES OF CANADA:


